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09/851,627	05/09/2001	Richard B. Pitbladdo	PIT-1	4080

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EXAMINER

VINCENT, SEAN E

ART UNIT

PAPER NUMBER

1731

DATE MAILED: 06/23/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/851,627

Applicant(s)

PITBLADDO, RICHARD B.

Examiner

Sean E Vincent

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-46 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-46 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 May 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Drawings

1. Figures 1a-1c and 2a-2c should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: "Overflow down draw glass forming method and apparatus".

3. The disclosure is objected to because of the following informalities: On page 1 of the specification, the filing date of the fourth provisional application (line 11) should be July 21, 2000. Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 8-12 and 35 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

6. Claim 8 recites the limitation "an inflow pipe" in lines 1-2 as well as line 8. It is unclear whether the inflow pipe of line 8 is the same or different from the inflow pipe of lines 1-2.
7. Claim 35 recites the limitation "an inflow pipe" in lines 1-2 as well as line 8. It is unclear whether the inflow pipe of line 8 is the same or different from the inflow pipe of lines 1-2.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 1 and 32 are rejected under 35 U.S.C. 102(b) as being anticipated by Leibowitz (US 3607182). The features of applicant's claims can be found in the figures, abstract and col. 2, line 67 to col. 3, line 60. Note that glass removed via the evacuation channel does not flow over the downwardly sloping sides of the wedge shaped sheet forming structure of Leibowitz.
10. Claim 5 is rejected under 35 U.S.C. 102(b) as being clearly anticipated by Aoki (JP 9-110443: machine translation enclosed). The features of applicant's claims can be found in figures 1-3 of Aoki.
11. Claims 13, 15 and 36 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Ward (US 3589887). The features of applicant's claims can be found in the figures and col. 2, lines 2-42 of Ward.

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12. Claims 19 and 34 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Overman (US 3506429). The features of applicant's claims can be found in the figures and col. 3, line 27 to col. 4, line 46 of Overman.

13. Claims 20 and 37 are rejected under 35 U.S.C. 102(b) as being anticipated by Corning (GB 982153). The features of applicant's claims can be found in the figures and page 2, lines 21-54 and 67-111 of Corning.

Claim Rejections - 35 USC § 103

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

15. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Leibowitz in view of Aoki.

16. Leibowitz does not teach curved trough topsides. Aoki taught similar glass sheet forming apparatus utilizing a curved, sloping top on the sides of the trough (see figures and translation: claims 1 and 2). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use curved trough top sides in Leibowitz because Aoki taught that uniform flow was more maintainable (see translation [0045-0046]).

17. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Leibowitz in view of Simon (US 3451798).

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18. Leibowitz does not teach a curved or chamfered trough bottom. Simon taught similar glass sheet forming apparatus wherein the bottom of the trough was curved (see figures 2-5). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to make the channel bottom of Leibowitz curved because Simon showed that it was well known in the art to change the channel bottom shape as such.
19. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Leibowitz in view of Overman.
20. Leibowitz did not teach means for differential heating. Overman taught an arrangement of individually controlled electrical heating coils (see the figures, col. 2, line 60 to col. 3, line 3 and col. 3, line 27 to col. 4, line 46). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide the apparatus of Leibowitz with heating coils such as in Overman because Overman taught that they could provide a desired temperature profile to the glass sheet during formation.
21. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Aoki in view of Overman. Aoki did not teach a differential heating means. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide the apparatus of Aoki with heating coils such as in Overman because Overman taught that they could provide a desired temperature profile to the glass sheet during formation.
22. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Aoki in view of Simon. Aoki did not teach a curved or chamfered trough bottom. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to make the channel

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bottom of Aoki curved because Simon showed that it was well known in the art to change the channel bottom shape as such.

23. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ward in view of Aoki. Ward did not teach curved trough topsides. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use curved trough top sides in Ward because Aoki taught that uniform flow was more maintainable (see translation [0045-0046]).

24. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ward in view of Overman. Ward did not teach means for differential heating. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide the apparatus of Ward with heating coils such as in Overman because Overman taught that they could provide a desired temperature profile to the glass sheet during formation.

25. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ward in view of Leibowitz.

26. Ward did not teach an overflow device on the trough that would have allowed some of the molten glass to overflow the trough without flowing over the downwardly sloping sides of the wedged shaped sheet forming structure. Leibowitz taught similar glass sheet forming apparatus wherein an evacuation channel was incorporated to draw off some of the molten glass before it would flow over the downwardly sloping sides of the wedge shaped sheet forming structure of Leibowitz. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the evacuation channel of Leibowitz into the apparatus of Ward because Leibowitz taught that it had the added benefit of removing bubbles.

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27. Claims 22 and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Corning in view of Ward. Corning did not teach a flow control plug, per se. Ward taught similar glass sheet forming apparatus utilizing 'edge controlling means'. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the edge controlling means of Ward into the apparatus of Corning because Ward taught that such means helped produce glass sheets of uniform thickness.
28. Claims 23 and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Corning in view of Simon. Corning did not teach a curved or chamfered trough bottom. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to make the channel bottom of Corning curved because Simon showed that it was well known in the art to change the channel bottom shape as such.
29. Claims 25 and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Corning in view of Overman. Corning did not teach a differential heating means. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide the apparatus of Corning with heating coils such as in Overman because Overman taught that they could provide a desired temperature profile to the glass sheet during formation.
30. Claims 26 and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Corning in view of Nobbe (US 1731260).
31. Corning did not teach a bottom orifice in the trough. Nobbe taught similar glass sheet forming apparatus utilizing a vertical slot in the bottom of the trough (see figure 5 and page 3, lines 11-34. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to put a vertical slot in the bottom of the trough of Corning because Nobbe

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taught that this would have permitted a third glass stream to flow between the outer two glass streams.

32. Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Corning in view of Aoki. Corning did not teach curved trough topsides. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use curved trough top sides in Corning because Aoki taught that uniform flow was more maintainable (see translation [0045-0046]).

33. Claims 29 and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Corning in view of Ferngren (US 1829639).

34. Corning did not teach two orifices on the side of the trough. Ferngren taught two extra glass passages in a similar glass sheet forming trough (see figures and page 2, lines 16-37 as well as page 3, lines 52-62). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to add orifices to the sides of the trough of Corning because Ferngren taught that it would maintain drawing stresses and the glass mass resistance in an equilibrium and a more even and uniform sheet would be produced.

35. Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over Corning and Ward as applied to claim 22 above, and further in view of Overman.

36. Corning and Ward did not teach a differential heating means. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide the apparatus of Corning and Ward with heating coils such as in Overman because Overman taught that they could provide a desired temperature profile to the glass sheet during formation.

Allowable Subject Matter

37. Claims 8-12 and 35 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action.

38. Claims 18, 21 24, 27, 30, 33, 38, 40, 44 and 46 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

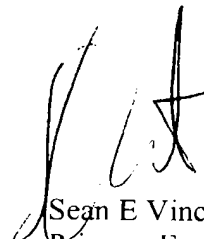
39. The following is a statement of reasons for the indication of allowable subject matter: The prior art does not teach or fairly suggest methods or apparatus for forming sheet glass as claimed including the following claimed features:

- a. an inflow pipe shaped to modify the way molten glass flows into the trough such that the molten glass has a more uniform time dependent flow throughout the trough relative to how molten glass would flow if it passed through a cylindrical pipe.
- b. an orifice running along the top of the trough as claimed wherein the orifice is narrow along the top of the trough closest to the inflow pipe and widens for at least a portion of the length of the orifice further away from the inflow pipe.
- c. elements of the trough being held together with a glass seal such that adjustments in the shape of the trough or orifices may be made.
- d. providing an overflow device on the trough as claimed and adjusting both the tilt of the trough and the amount of molten glass passing through the overflow device.

It would not have been obvious to incorporate these features into the disclosures of the prior art.

Conclusion

40. The prior art made of record and not relied upon is cited to further show the state of the art.
41. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sean E Vincent whose telephone number is 703-305-3607. The examiner can normally be reached on M - F (8:30 - 6:00) Second Monday Off.
42. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven P Griffin can be reached on 703-308-1164. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.
43. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0651.



Sean E Vincent
Primary Examiner
Art Unit 1731

S Vincent
June 18, 2003